

Removal Site Evaluation Investigation Results

Northeast Church Rock Mine Site
United Nuclear Corporation

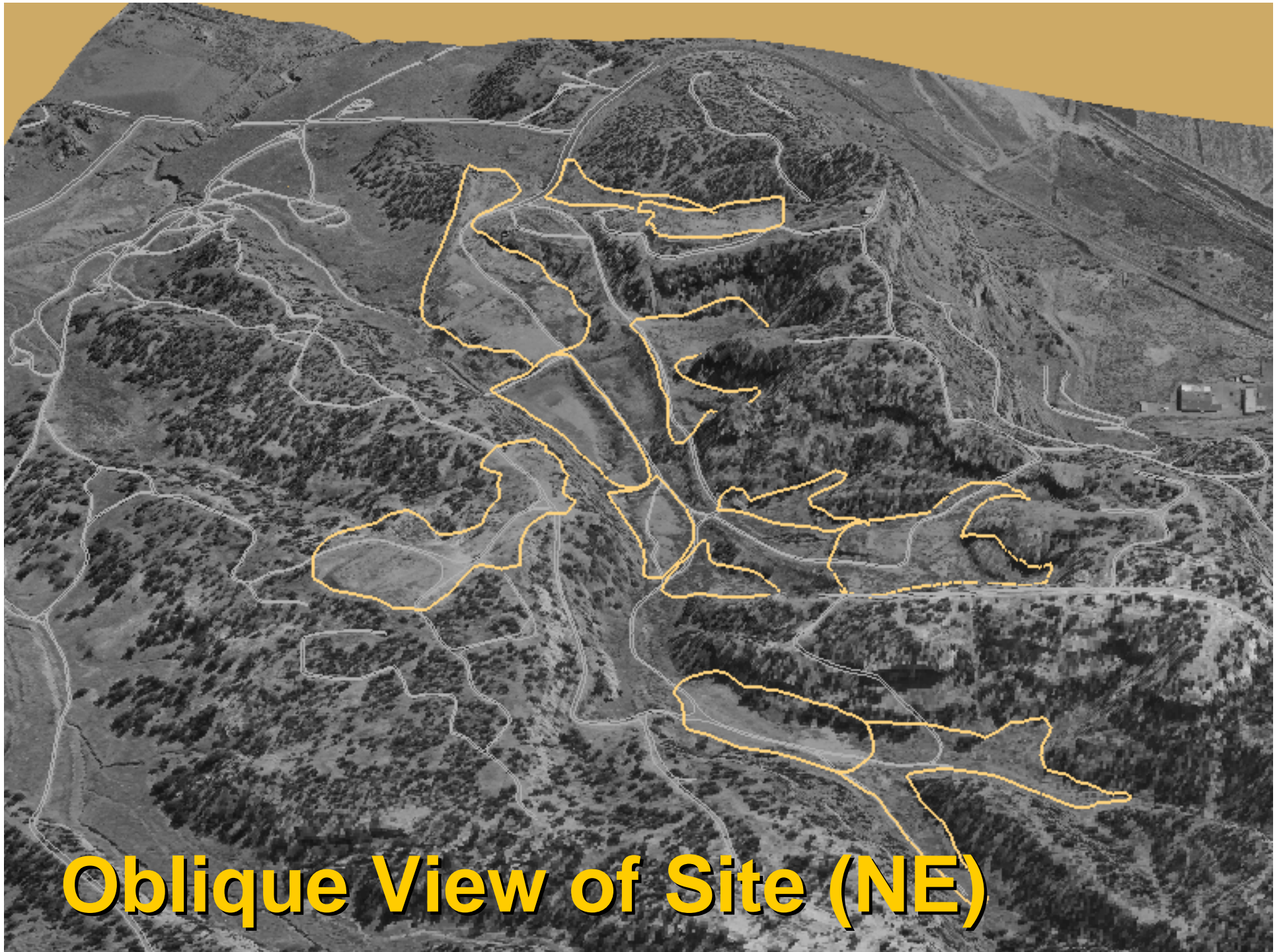
May 31, 2007

Presentation Topics

- Removal Site Evaluation scope of work
- Gamma survey and soil sample results
- Summary of Residential Removal Actions

Site Location





SURVEY AREAS

NECR-1

NECR-2

Ponds 1 & 2

Pond 3/3a

Sandfill 1, 2 & 3

Sediment Pad

Boneyard

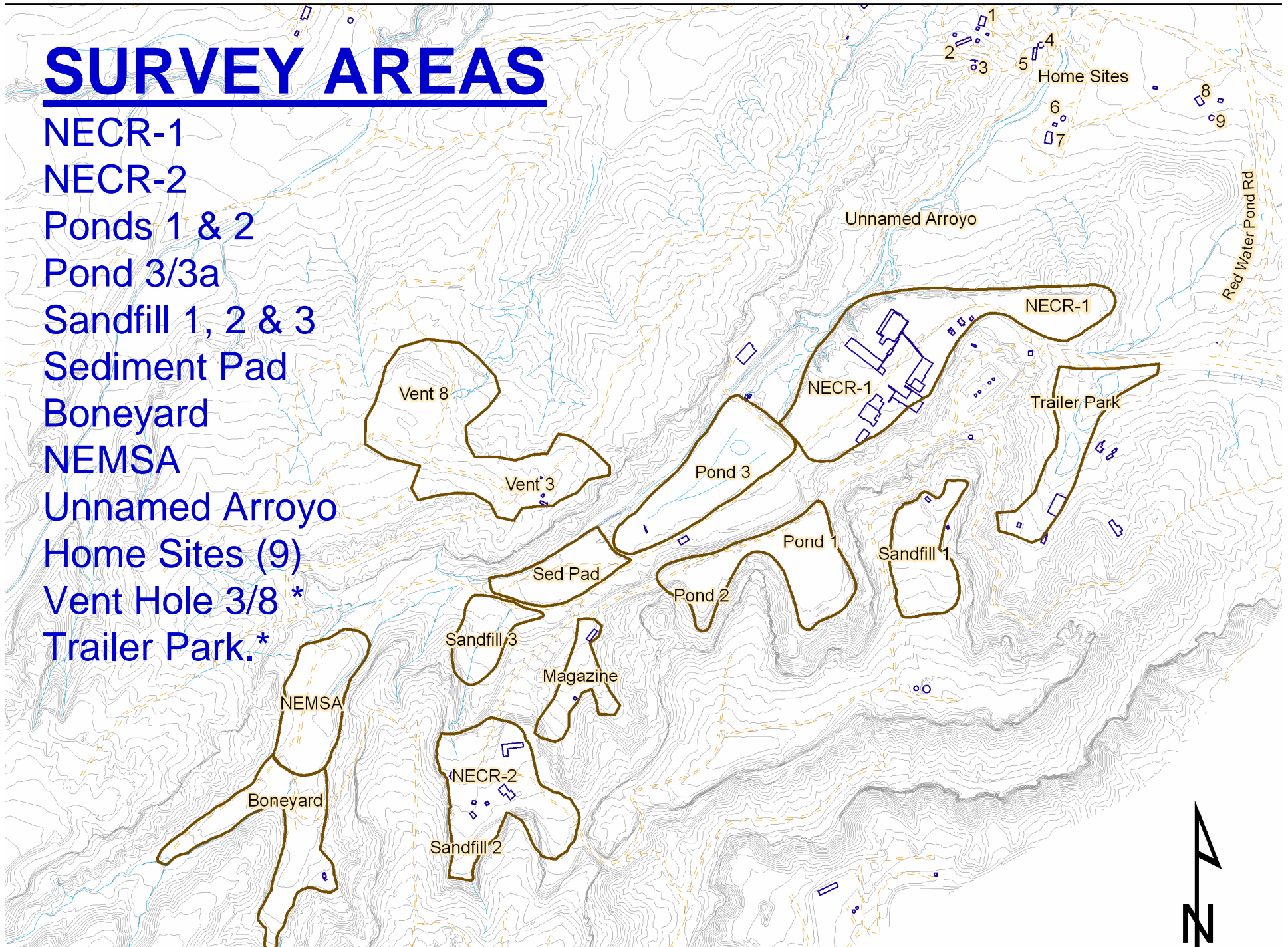
NEMSA

Unnamed Arroyo

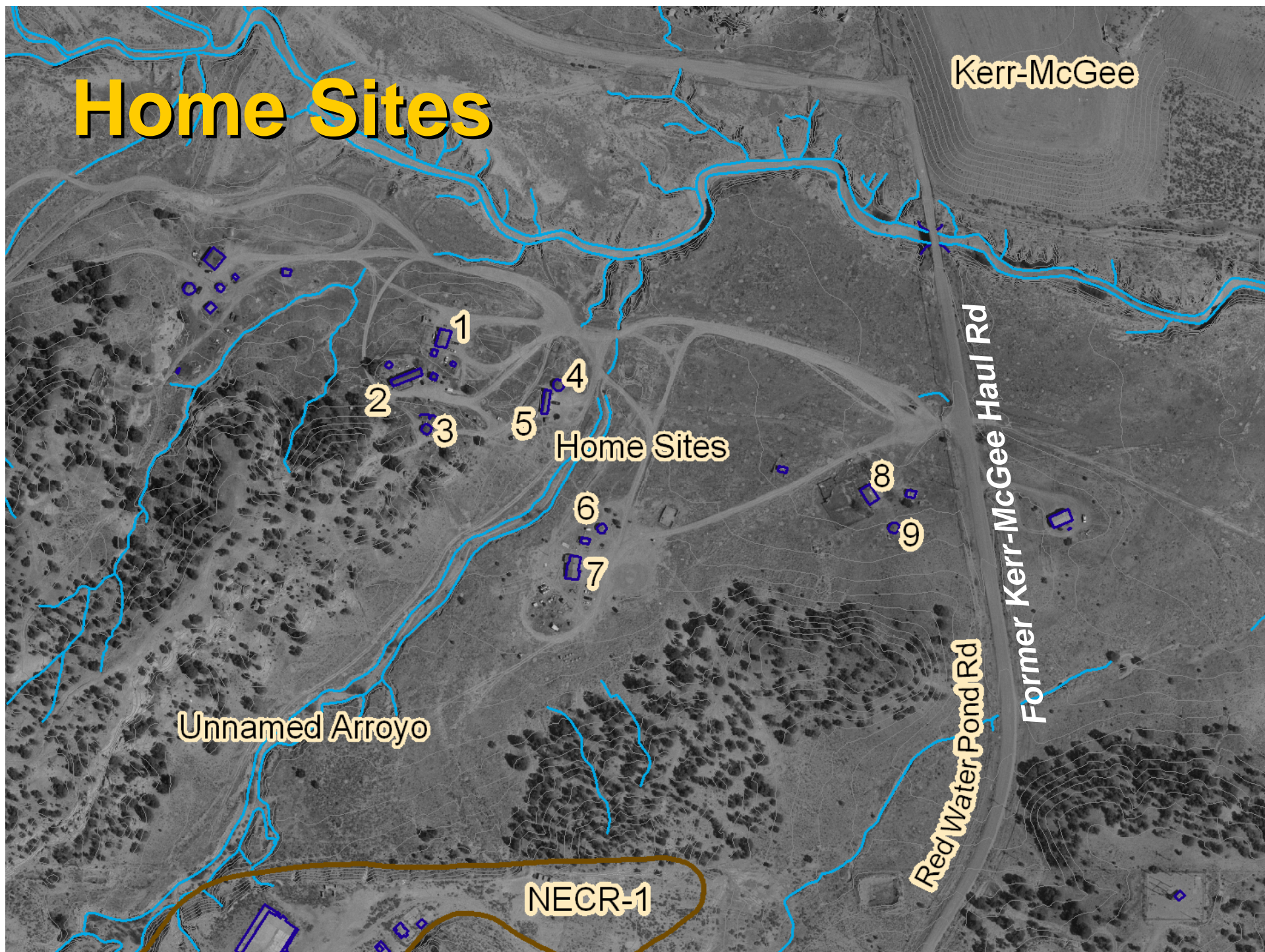
Home Sites (9)

Vent Hole 3/8 *

Trailer Park.*



Home Sites



RSE Investigation Scope Of Work

- Gamma surveying – static & survey
- Surface soil sampling (upper 6")
- Subsurface soil sampling (test pits & drill holes)

Gamma Field Survey Methods

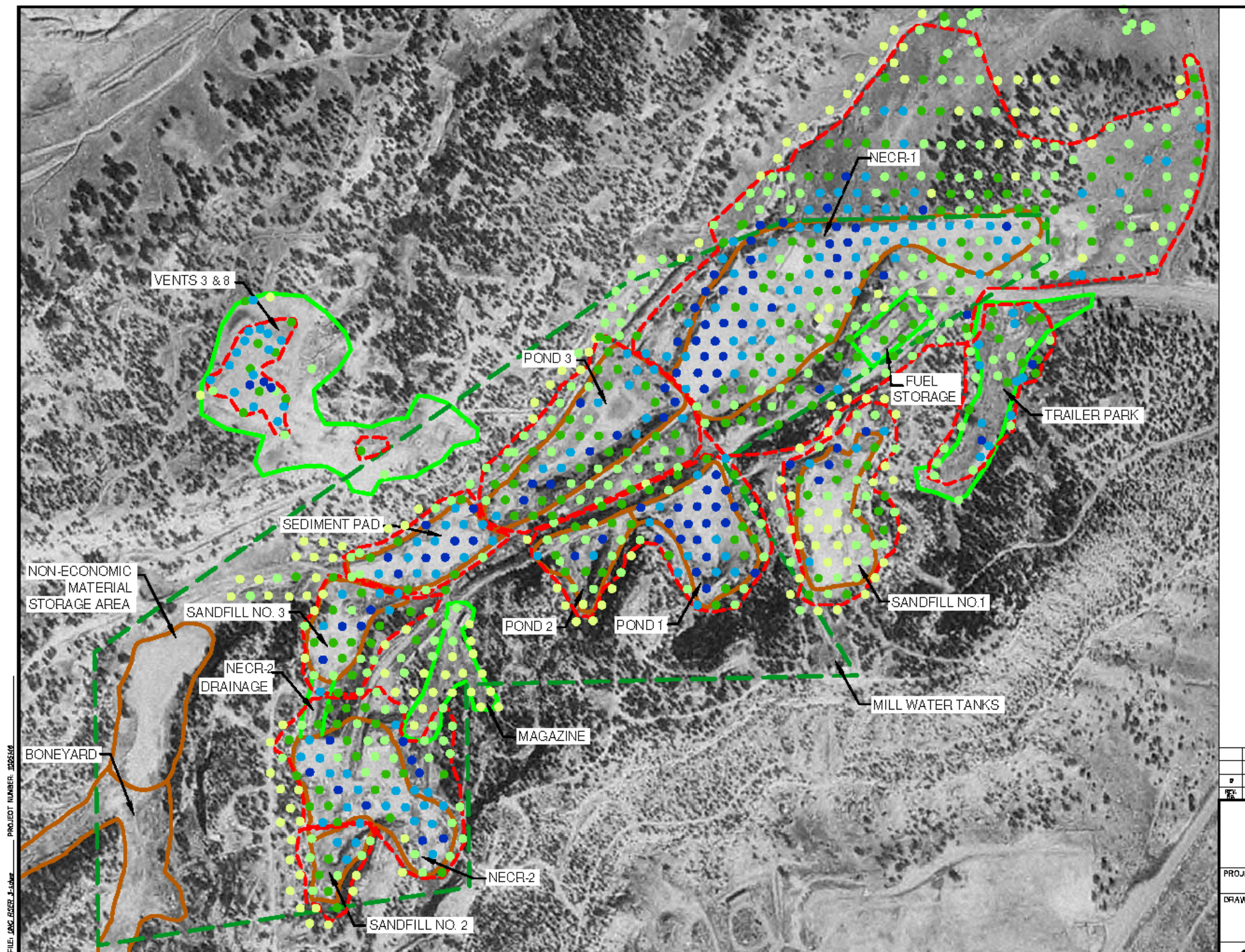
- Scan surveys (walk over)
- Static surveys (stationary readings)
- Data converted to pCi/g using linear regression between rad scan & lab Ra-226 concentrations in soil.

Static Gamma Survey Results as Ra-226 in Soil (pCi/g) - Onsite

Survey Area	Qty	Range	Average
NECR-1	305	<0.6 to 218.8	19.6
NECR-2	118	<0.6 to 215.2	15.6
Sandfill 1	76	<0.6 to 76.0	9.0
Sandfill 2	21	<0.6 to 26.0	5.6
Sandfill 3	43	<0.6 to 133.6	14.7
Ponds 1 & 2	85	<0.6 to 498.3	45.8
Pond 3/3a	89	<0.6 to 293.6	20.6
Sediment Pad	40	<0.6 to 210.7	34
Vent Holes 3 & 8	35	<0.6 to 71.6	19.3
Trailer Park	41	2.5 to 108.7	16.5

Static Gamma Survey Results as Ra-226 in Soil (pCi/g) – Home Sites

Home Site	Qty	Range	Avg
Site 1	5	<0.6	<0.6
Site 2	5	<0.6	<0.6
Site 3	5	0.6 to 1.0	0.7
Site 4	5	1.0 to 2.0	1.5
Site 5	5	<0.6 to 1.9	1.2
Site 6	5	3.3 to 4.2	3.9
Site 7	5	2.5 to 11.0	5.3
Site 8	5	2.9 to 3.5	3.1
Site 9	5	2.4 to 3.2	2.8



Preliminary Constituents of Potential Concern (COPCs)

Radium-226

Arsenic

Molybdenum

Selenium

Uranium

Vanadium



Soil Sampling Program

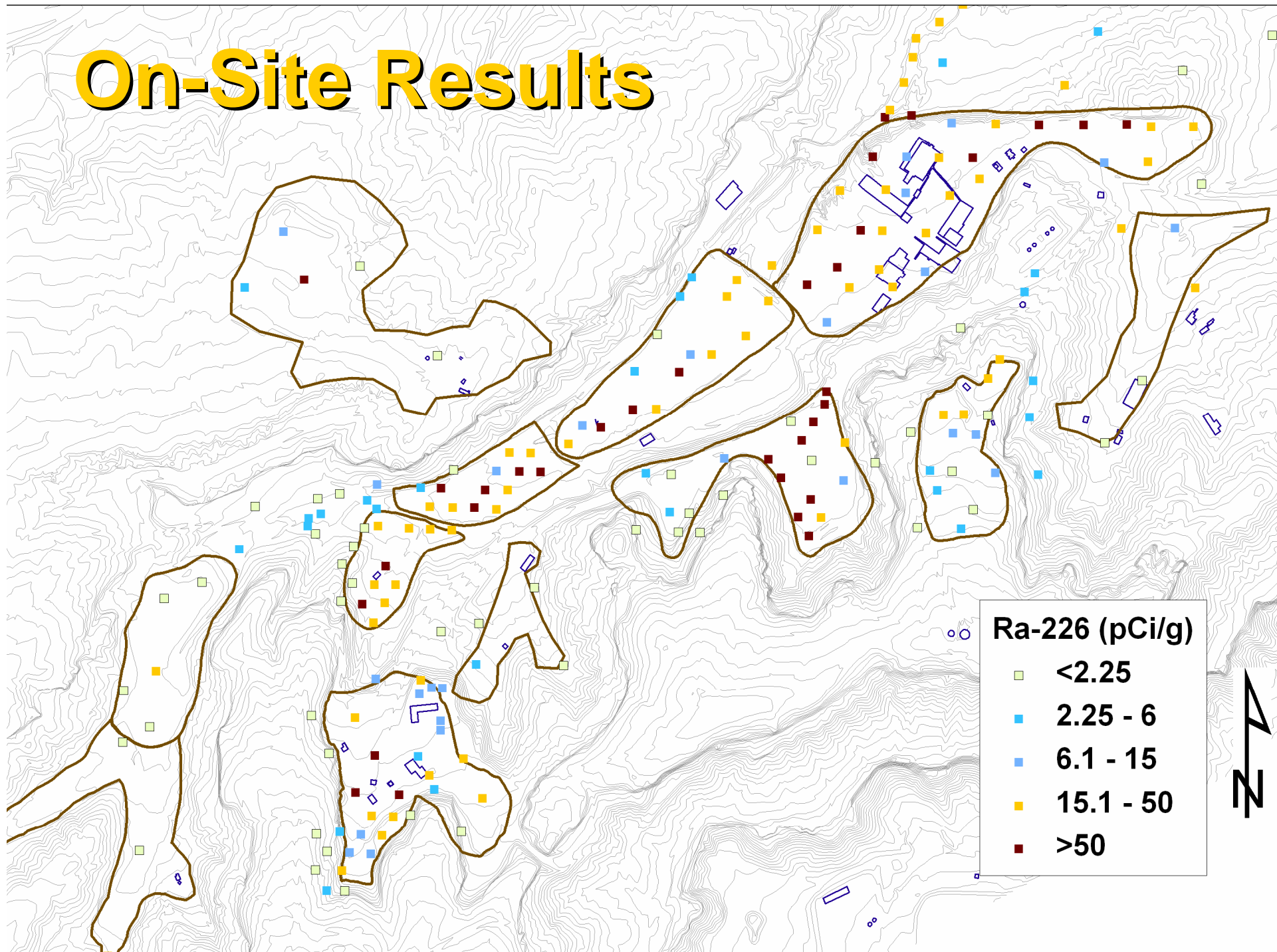
Area	Surface Samples (<0.5 ft)		Test Pits/Drill Holes
	Inside RSE Boundary	Step-out Samples	>0.5 ft bgs
NECR-1	31	16	28
NECR-2	15	4	6
Ponds 1 and 2	19	4	14
Pond 3/3a	15	0	14
Sediment Pad	14	0	9
Sandfill 1	15	3	9
Sandfill 2	13	0	5
Sandfill 3	13	2	7
NEMSA	5	0	13
Boneyard	5	0	11
Trailer Park	0	5	0
Vents 3 & 8	0	5	0
Unnamed Arroyo	0	0	30
Home Sites	45	0	0
Total	190	39	146

Note: soil samples collected randomly, except at Home Sites where they were sampled at the highest gamma readings.

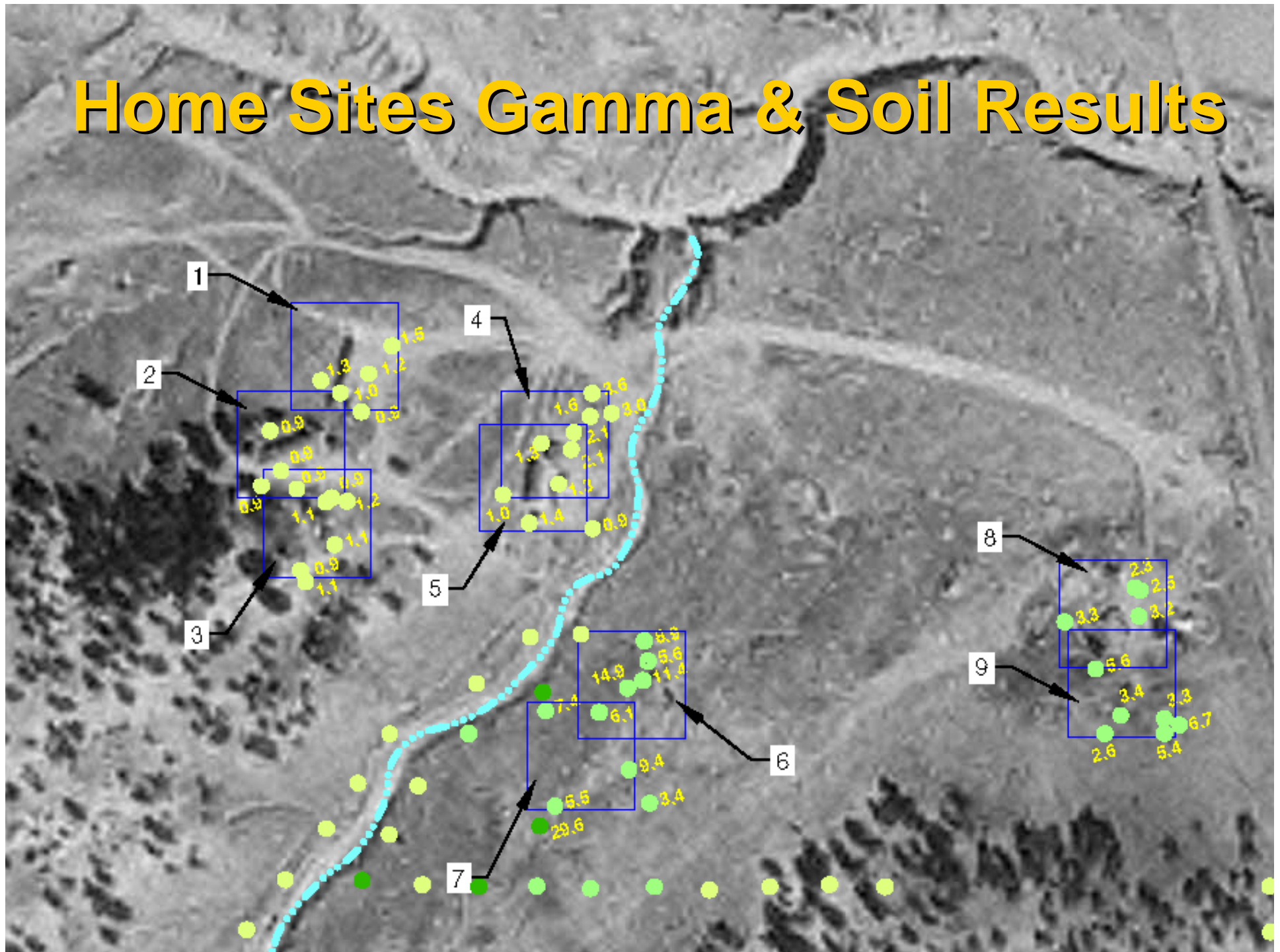
Summary of Surface Soil Analytical Results

	Ra-226	As	Mo	Se	U	V
	pCi/g	mg/kg				
Screen	2.24	3.7	5,100	5,100	200	1,000
Qty	263	229	229	229	229	229
Avg	30.6	4.2	3.8	9.5	79.7	40.2
Max	875.0	14.9	214	159	3970	502

On-Site Results

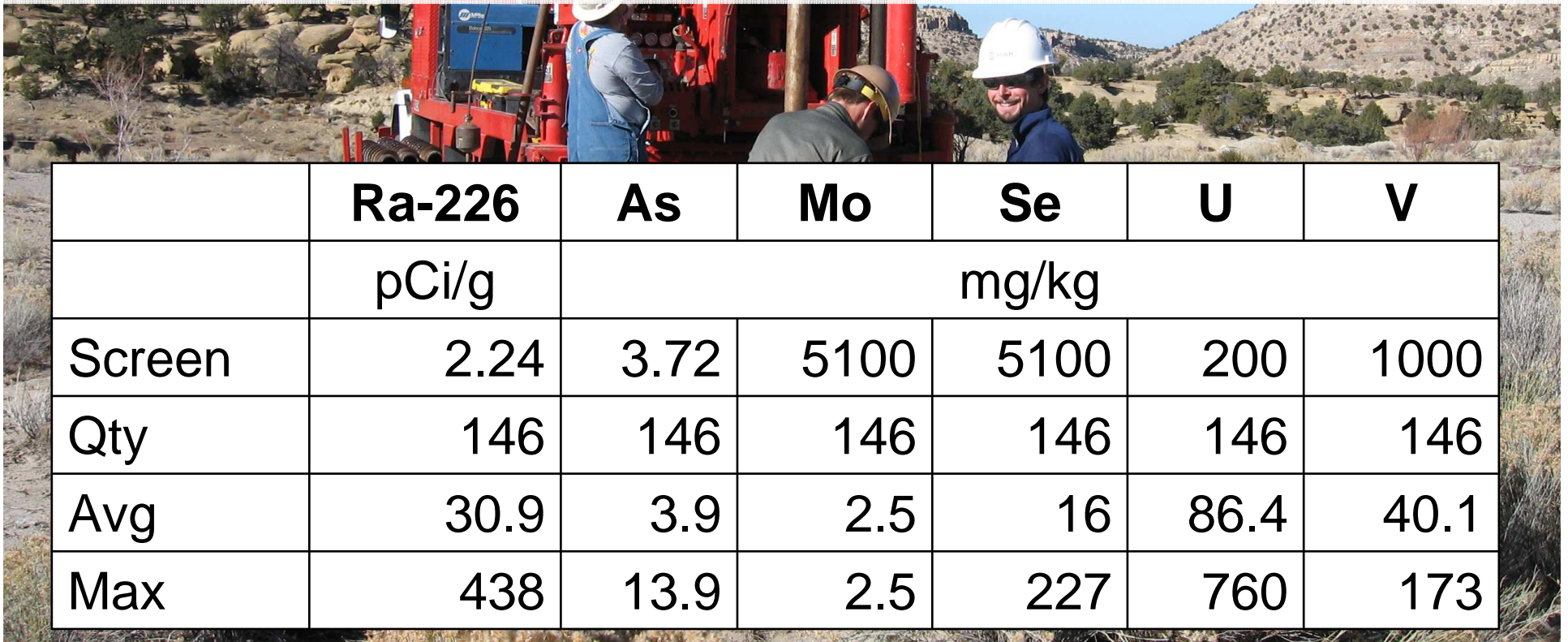


Home Sites Gamma & Soil Results



Summary of Subsurface Soil Analytical Results

- Exceedances of screening levels top 5 to 14 feet, except NECR-1
- NECR-1, exceedances in one soil boring to 25 feet bgs.



	Ra-226	As	Mo	Se	U	V
	pCi/g	mg/kg				
Screen	2.24	3.72	5100	5100	200	1000
Qty	146	146	146	146	146	146
Avg	30.9	3.9	2.5	16	86.4	40.1
Max	438	13.9	2.5	227	760	173

Unnamed Arroyo – Subsurface Sampling with Augers

- *Samples collected 0-1, 1-2 & 2-3 ft bgs*
- *From NECR-1 to the next arroyo*
- *Ra-226 ranged from ~8 to 36 pCi/g*

Risk Assessment

Land Use

- On-site (current caretaker, future grazing or mining)
- Off-site (residential, grazing)

Exposure media:

- Surface/subsurface soil, sediment and biota have potentially complete exposure pathways
- It is thought that groundwater pathways are incomplete

Exposure Scenarios

- External radiation, ingestion, dust inhalation & dermal contact w/soil or sediment, consumption of biota (e.g., plants and animals)

Summary of Residential Removal #1

- EPA lead
 - Consultation with NN March 21
 - Action Memo April 18
 - UAO April 27
 - Mobilized May 1
 - Excavation began May 8
 - Five yards, each .5 acres
 - 2.24 pCi/g cleanup level
 - Started with 6" ex, in some cases we went slightly deeper
 - Chased contamination on bare soils contiguous with each parcel
 - Dust monitoring and sampling for radiologicals in air
 - Radon testing in homes of temporarily lodged families
 - MARSSIM Final Status Surveys – conducted 100% scans + verification soil sampling
 - Backfilling/reseeding
 - Concluded last property May 26
- RP lead
 - Disposal staging at NECR1 – liner and visqueen cover
 - Approximately 4,000 yd³ for off-site disposal at appropriate facility





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Residential Removal #2

- Separate Action Memo May 29
- One property to east of Red Water Pond Road
- Estimate 40 yd³ to remove
- Temporary lodging
- Same protocols except all fund lead, including off-site disposal
- Expect to complete job early next week